Inspection Report For Well: UT20736 - 07536

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466
This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/11/2013
Others: Ajayi, Christopher — Time: 11:05 (am) / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 18-14		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 6/1/2007		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESW S18 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	1405 /
Last MIT:	Pass 4/9/2012	***Annulus Pressure From Last MIT:***	1010

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 1/2/14
Initials DB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 1191 / L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One) ☒ Active ☐ Not Injecting ☐ Plugged and Abandoned ☐ Being Reworked ☐ Production ☐ Under Construction

U2 Entered
Date 12/17/13
Initial SC

See page 2 for photos, comments, and site conditions.

GREEN	BLUE	CBI

Inspection Report For Well: UT20736 - 07536 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

CONCURRENCE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

Re: Additional Well to Antelope Creek Area Permit
UIC Permit No. UT20736-00000
Well ID: UT20736-07536
Ute Tribal No. 18-14
Duchesne County, Utah

Dear Mr. Wall:

The Petroglyph Operating Company, Inc.'s (Petroglyph) request to convert the former Green River Formation oil well Ute Tribal No. 18-14 to an enhanced recovery injection well in the Antelope Creek Waterflood project is hereby authorized by the Environmental Protection Agency (EPA) under the terms and conditions of the Authorization For Additional Well.

The addition of the proposed injection well, within the exterior boundary of the Uintah & Ouray Indian Reservation, is being made under the authority of 40 CFR §144.33 (c) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. Unless specifically mentioned in the enclosed Authorization For Additional Well, the Ute Tribal No. 18-14 is subject to all terms and conditions of the UIC Area Permit UT20736-00000 as modified.

Please be aware that Petroglyph does not have authorization to begin injection operations into the well until all Prior to Commencing Injection requirements have been submitted and evaluated by the EPA, and Petroglyph has received written authorization from the Director to begin injection.

Prior to receiving authorization to inject, the EPA requires that Petroglyph submit for review and approval the following: (1) the results of a **Part I (Internal) Mechanical Integrity Test** (MIT), (2) a **pore pressure** calculation of the injection interval, and (3) a completed **EPA Form No. 7520-12** Well Rework Record.

8P-W-GW Dagt 3/21/07 w/corr

8P-W-GW Pratt 3/26/07

LMB 3/20/07

3/26/07 8PW-GW

The initial Maximum Allowable Injection Pressure (MAIP) for the Ute Tribal No. 18-14 was determined to be **1405 psig.** UIC Area Permit UT20736-00000 also provides the opportunity for the permittee to request a change in the MAIP based upon results of a step rate test that demonstrates that the formation breakdown pressure will not be exceeded.

If you have any questions, please call Ms. Linda Bowling at (303) 312-6254 or 1.800.227.8917 (Ext. 6254). Please submit the required data to **ATTENTION: LINDA BOWLING**, at the letterhead address, citing **MAIL CODE: 8P-W-GW** very prominently.

Sincerely,

Stephen S. Tuber
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

encl: Authorization For Conversion of An Additional Well
EPA Form No. 7520-12 (Well Rework Record)

cc w/enclosures:
Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

Frances Poowegup, Councilwoman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Ft. Duchesne, UT 84026

Irene Cuch, Councilwoman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Ft. Duchesne, UT 84026

Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Ft. Duchesne, UT 84026

T. Smiley Arrowchis, Vice Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Ft. Duchesne, UT 84026

Fluid Minerals Engineering Office
U.S. Bureau of Land Management-
Vernal Field Office
170 South 500 East
Vernal, Utah 84078

Gilbert Hunt
Associate Director
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Kenneth Smith
Executive Vice President and Chief
Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

Lynn Becker, Director
Energy and Minerals Department
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, UT 84026

Richard Jenks, Jr., Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Ft. Duchesne, UT 84026

Shaun Chapoose, Director
Land Use Department
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

bcc w/o enclosures:

Judy Hervig, 8TAP
Nathan Wiser, 8 ENF-UFO

CONCURRENCE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On October 18, 2006, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 18-14**
EPA Well ID Number:	**UT20736-07536**
Location:	660 ft FSL & 1980 ft FWL Sec. 18 - T5S - R3W Duchesne County, Utah

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: _____ _____

Stephen S. Tuber
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 18-14**
EPA Well ID Number: **UT20736-07536**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity Test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker, at approximately 3698 ft $(KB)_{CBL}$, to the top of the Basal Carbonate, at approximately 5696 ft $(KB)_{CBL}$.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1405 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.009 D = 3873 ft (top perforation depth KB)
MAIP = 1405 psig

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.***
Based on review of well construction and cementing records, including CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: ***No Corrective Action is required.***
The 2-3/8" or similar size injection tubing is approved. The packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 18-14 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well:	Ute Tribal No. 18-11L	Location: NESW	Sec. 18 - T5S - R3W
Well:	Ute Tribal No. 18-12M	Location: NWSW	Sec. 18 - T5S - R3W
Well:	Ute Tribal No. 18-15	Location: SWSE	Sec. 18 - T5S - R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cement bond log and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation (located at 3873 ft (KB)) with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between approximately 2454 ft (KB) to 2654 ft (KB).

PLUG NO. 3: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the top of the Green River, between approximately 1185 ft (KB) to 1385 ft (KB).

PLUG NO. 4: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the base of the USDW, between approximately 844 ft (KB) to 1044 ft (KB).

PLUG NO. 5: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 414 ft (KB) (unless pre-existing backside cement precludes cement-squeezing this interval).

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing, from at least 389 ft (KB) to 439 ft (KB).

PLUG NO. 7: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 8: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227.8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:
The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:
The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:
Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 18-14**
EPA Well ID: **UT20736-07536**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1285 ft (KB). According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at approximately 75 ft. below ground surface at this well location. Based on analysis of the submitted CBL the top of casing cement in this well is at approximately 1932 ft (KB).

Confining Zone: The Confining Zone at this location is approximately 230 ft of interbedded limestone and shale between the depths of 3468 ft to 3698 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 1998 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3698 ft (KB) to the top of the Basal Carbonate Formation at 5696 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The CBL shows three (3) sections that consist of more than 69 ft of 80% or greater bond across the confining zone, at approximately 3540 ft (KB) to 3558 ft (KB); 3644 ft to 3659 ft (KB); and 3662 ft (KB) to 3698 ft (KB)

Surface Casing: 8-5/8" casing is set at 414 ft (KB) in a 12-1/4" hole, using 300 sacks cement circulated to the surface

Longstring Casing: 5-1/2" casing is set at 5805 ft (KB) in a 7-7/8" 5803 ft (KB) total depth hole with plugged back total depth (PBTD) of 5764 ft (KB), cemented with 420 sacks cement

Top of Cement : 1932 ft $(KB)_{CBL}$

Perforations: Top: **3873 ft** (KB) Bottom : **4775 ft** (KB)

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for two wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 18-11L	Casing Cement top: 2002 ft $(KB)_{CBL}$
Well: Ute Tribal No. 18-12M	Casing Cement top: surface $_{CBL}$
Well: Ute Tribal No. 18-15	Casing Cement top: 2034 ft $(KB)_{CBL}$

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On October 18, 2006, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 18-14**
EPA Well ID Number:	**UT20736-07536**
Location:	660 ft FSL & 1980 ft FWL Sec. 18 - T5S - R3W Duchesne County, Utah

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: _____ _____

Stephen S. Tuber
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 18-14**
EPA Well ID Number: **UT20736-07536**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity Test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker, at approximately 3698 ft $(KB)_{CBL}$, to the top of the Basal Carbonate, at approximately 5696 ft $(KB)_{CBL}$.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1405 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.009 D = 3873 ft (top perforation depth KB)
MAIP = 1405 psig

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.***
Based on review of well construction and cementing records, including CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: ***No Corrective Action is required.***
The 2-3/8" or similar size injection tubing is approved. The packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 18-14 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well:	Ute Tribal No. 18-11L	Location: NESW	Sec. 18 - T5S - R3W
Well:	Ute Tribal No. 18-12M	Location: NWSW	Sec. 18 - T5S - R3W
Well:	Ute Tribal No. 18-15	Location: SWSE	Sec. 18 - T5S - R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cement bond log and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation (located at 3873 ft (KB)) with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between approximately 2454 ft (KB) to 2654 ft (KB).

PLUG NO. 3: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the top of the Green River, between approximately 1185 ft (KB) to 1385 ft (KB). ~~This plug fulfills the Utah BLM P&A requirement.~~

PLUG NO. 4: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the base of the USDW, between approximately 844 ft (KB) to 1044 ft (KB). ~~This plug fulfills the Utah BLM P&A requirement.~~

PLUG NO. 5: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 414 ft (KB) (unless pre-existing backside cement precludes cement-squeezing this interval.)

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing, from at least 389 ft (KB) to 439 ft (KB).

PLUG NO. 7: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 8: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227.8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:
The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:
The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:
Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 18-14**
EPA Well ID: **UT20736-07536**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1285 ft (KB). According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at approximately 75 ft. below ground surface at this well location. ~~Based on information reported by Petroglyph in the cement bond log (CBL) submitted, the base of a USDW was found at 944 ft (KB) in the Ute Tribal 18-14.~~ Based on analysis of the submitted CBL the top of casing cement in this well is at approximately 1932 ft (KB).

Confining Zone: The Confining Zone at this location is approximately 230 ft of interbedded limestone and shale between the depths of 3468 ft to 3698 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 1998 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3698 ft (KB) to the top of the Basal Carbonate Formation at 5696 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The CBL shows three (3) sections that consist of more than 69 ft of 80% or greater bond across the confining zone, at approximately 3540 ft (KB) to 3558 ft (KB); 3644 ft to 3659 ft (KB); and 3662 ft (KB) to 3698 ft (KB)

Surface Casing: 8-5/8" casing is set at 414 ft (KB) in a 12-1/4" hole, using 300 sacks cement circulated to the surface

Longstring Casing: 5-1/2" casing is set at 5805 ft (KB) in a 7-7/8" 5803 ft (KB) total depth hole with plugged back total depth (PBTD) of 5764 ft (KB), cemented with 420 sacks cement

Top of Cement : 1932 ft $(KB)_{CBL}$

Perforations: Top: **3873 ft** (KB) Bottom : **4775 ft** (KB)

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for two wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well:	Ute Tribal No. 18-11L	Casing Cement top: 2002 ft $(KB)_{CBL}$
Well:	Ute Tribal No. 18-12M	Casing Cement top: surface $_{CBL}$
Well:	Ute Tribal No. 18-15	Casing Cement top: 2034 ft $(KB)_{CBL}$

OMB No. 2040-0042 Approval Expires 11/30/2014

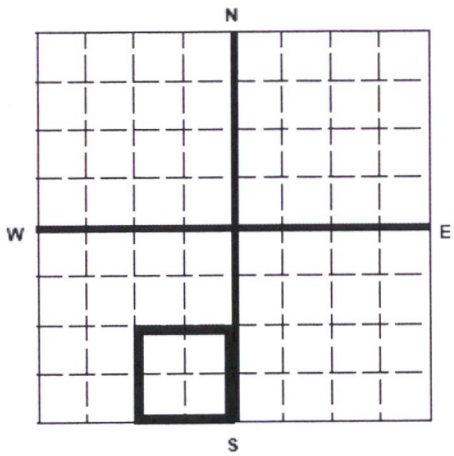
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07536

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 4/4/17
Initial B

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

GREEN BLUE OBI
TAB 2

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1257	1301	1359		0	0
February	16	1342	1348	1531		0	0
March	16	1341	1359	1534		0	0
April	16	1310	1370	1396		0	0
May	16	1304	1344	1530		0	0
June	16	1247	1327	1337		0	0
July	16	1288	1335	1361		0	0
August	16	1356	1366	1497		0	0
September	16	1261	1331	1227		0	0
October	16	1259	1289	1418		0	0
November	16	1287	1320	1551		0	0
December	16	1343	1349	1716		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

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1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-14 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345368**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/23/2017**
System Temperature 1 (°F):	**300**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**130**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**1.0022**
pH:	**8.40**
Calculated TDS (mg/L):	**6972.93**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**0.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**10.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**2119.73**	Chloride (Cl):	**2500.00**
Potassium (K):	**18.59**	Sulfate (SO_4):	**50.00**
Magnesium (Mg):	**17.57**	Bicarbonate (HCO_3):	**1969.00**
Calcium (Ca):	**36.92**	Carbonate (CO_3):	
Strontium (Sr):	**3.30**	Hydroxide(HO):	
Barium (Ba):	**8.88**	Acetic Acid (CH_3COO)	
Iron (Fe):	**137.16**	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	**89.40**	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	**0.04**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	**0.22**	Bromine (Br):	
Aluminum (Al):	**0.30**	Silica (SiO_2):	**22.12**
Lithium (Li):	**2.84**	Calcium Carbonate ($CaCO_3$):	
Boron (B):	**3.56**	Phosphates (PO_4):	**16.22**
Silicon (Si):	**10.34**	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.57	30.56	1.06	4.77	5.16	9.06	4.26	99.70	0.00	0.00	0.00	0.00	0.00	0.00	12.52	10.04
149.00	267.00	1.63	30.79	0.97	4.65	5.11	9.06	4.36	99.70	0.00	0.00	0.00	0.00	0.00	0.00	12.26	10.04
168.00	483.00	1.71	31.07	0.89	4.54	5.08	9.06	4.46	99.71	0.00	0.00	0.00	0.00	0.00	0.00	12.04	10.04
187.00	700.00	1.79	31.32	0.84	4.43	5.08	9.06	4.55	99.72	0.00	0.00	0.00	0.00	0.00	0.00	11.85	10.04
206.00	917.00	1.89	31.54	0.80	4.36	5.11	9.06	4.64	99.72	0.00	0.00	0.00	0.00	0.00	0.00	11.68	10.04
224.00	1133.00	1.99	31.72	0.78	4.30	5.15	9.06	4.73	99.73	0.00	0.00	0.00	0.00	0.00	0.00	11.54	10.04
243.00	1350.00	2.10	31.87	0.76	4.28	5.20	9.06	4.82	99.73	0.00	0.00	0.00	0.00	0.00	0.00	11.42	10.04
262.00	1567.00	2.22	31.99	0.76	4.27	5.27	9.06	4.89	99.73	0.00	0.00	0.00	0.00	0.00	0.00	11.31	10.04
281.00	1783.00	2.34	32.07	0.77	4.29	5.36	9.06	4.97	99.73	0.00	0.00	0.00	0.00	0.00	0.00	11.23	10.04
300.00	2000.00	2.46	32.14	0.79	4.33	5.45	9.06	5.03	99.73	0.00	0.00	0.00	0.00	0.00	0.00	11.15	10.04

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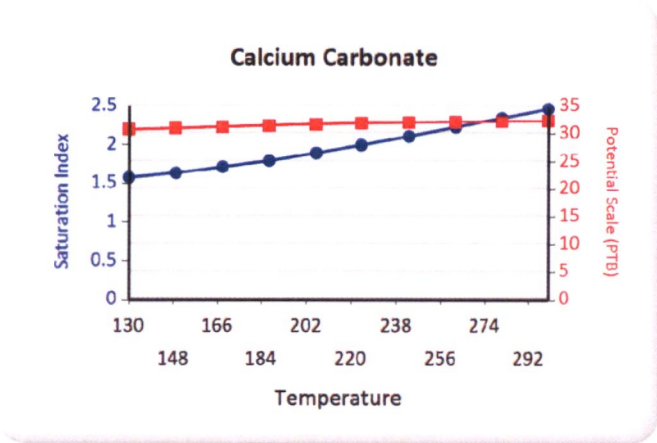
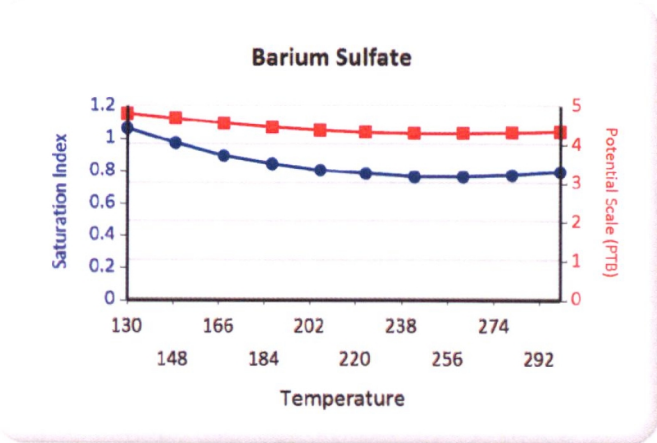
Water Analysis Report

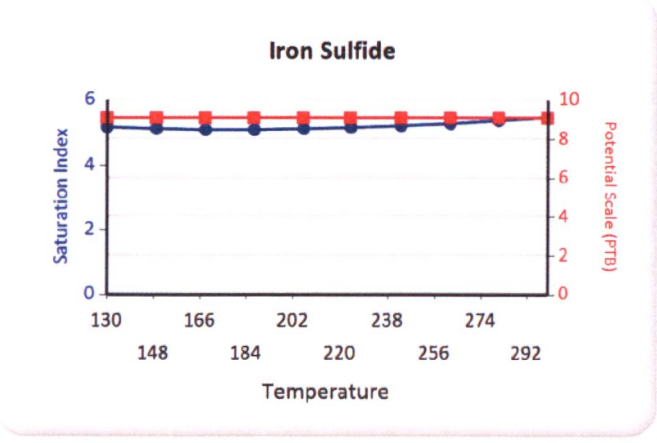
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	3.71	60.07	10.88	0.02	3.86	23.94	2.04	16.48	14.55	51.31
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92	60.09	10.44	0.02	4.60	27.09	2.44	19.09	15.01	51.31
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	4.12	60.10	10.06	0.02	5.38	30.05	2.87	21.95	15.53	51.31
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	4.30	60.10	9.73	0.02	6.16	32.18	3.31	24.45	16.07	51.31
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	4.46	60.10	9.43	0.02	6.93	33.53	3.75	26.43	16.62	51.31
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	4.61	60.10	9.16	0.02	7.68	34.30	4.19	27.85	17.17	51.31
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	4.74	60.11	8.93	0.02	8.42	34.70	4.62	28.74	17.72	51.31
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85	60.11	8.72	0.02	9.13	34.90	5.04	29.26	18.26	51.31
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	4.95	60.11	8.54	0.02	9.82	35.00	5.45	29.55	18.79	51.31
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	60.11	8.37	0.02	10.48	35.05	5.84	29.70	19.30	51.31

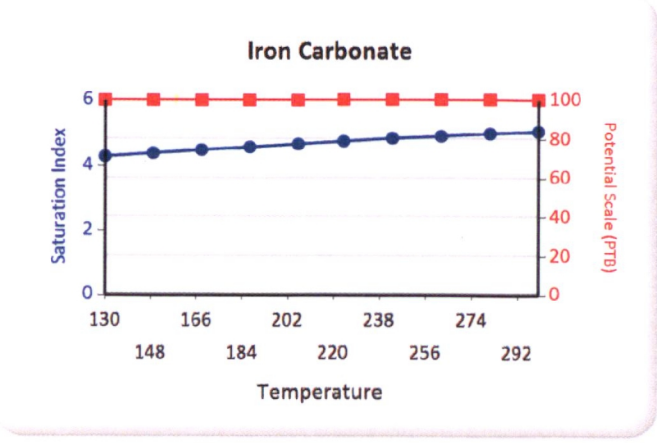
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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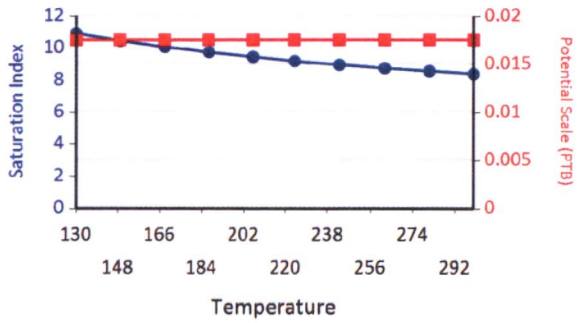
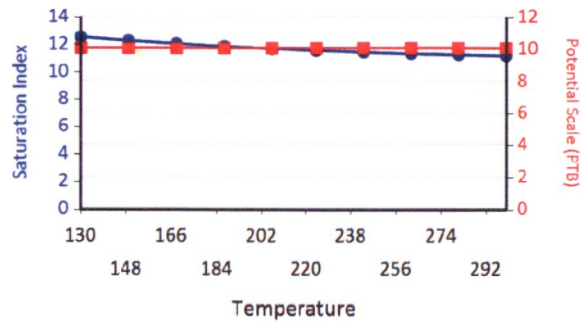
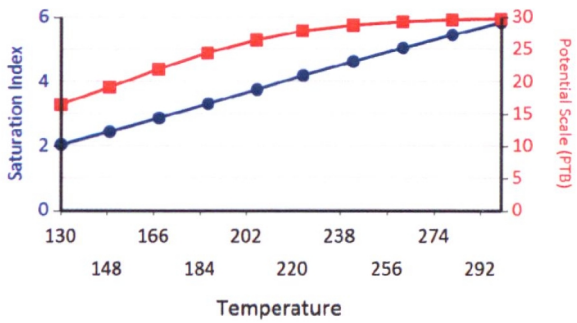
Lead Sulfide



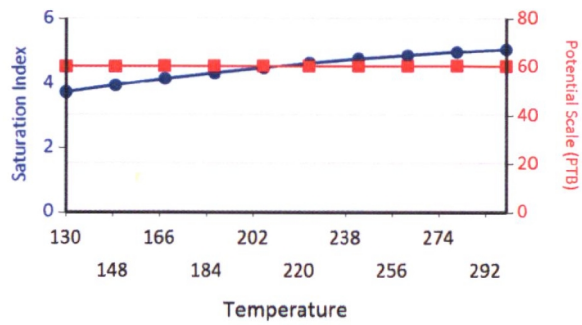
Zinc Sulfide



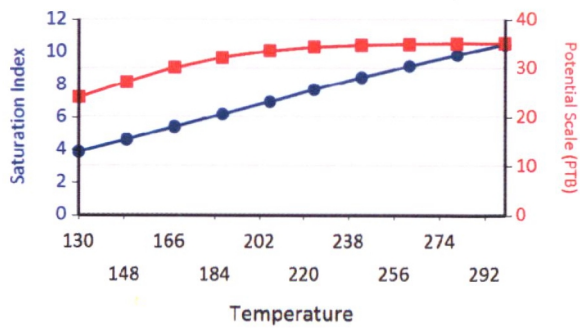
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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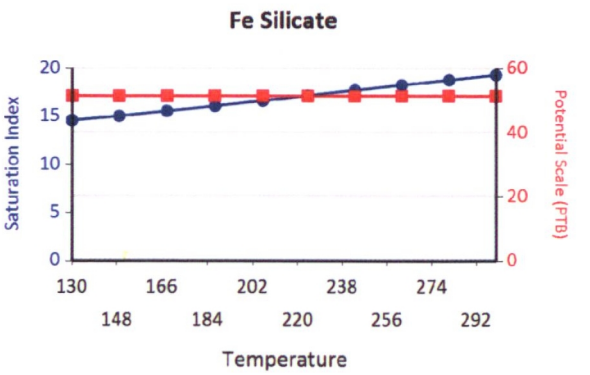
Water Analysis Report



June 1, 2017

Gary Wang or Don Breffle
Underground Injection Control Enforcement
U.S. Environmental Protection Agency
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Tests

Mr. Wang/ Mr. Breffle:

Please find enclosed 5-year Mechanical Integrity Tests for the following wells:

- Ute Tribal 04-01
- Ute Tribal 08-06
- Ute Tribal 16-16
- Ute Tribal 18-14 UT20736 - 07536
- Ute Tribal 28-11
- Ute Tribal 29-02
- Ute Tribal 29-08A
- Ute Tribal 29-10
- Ute Tribal 29-11
- Ute Tribal 29-15
- Ute Tribal 30-16
- Ute Tribal 33-16D3

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

U2 Entered
Date 6/14/17
Initial DB

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: ______________________ Date: 4/13/17
Test conducted by: CHAD STEVENSON
Others present: ______________________

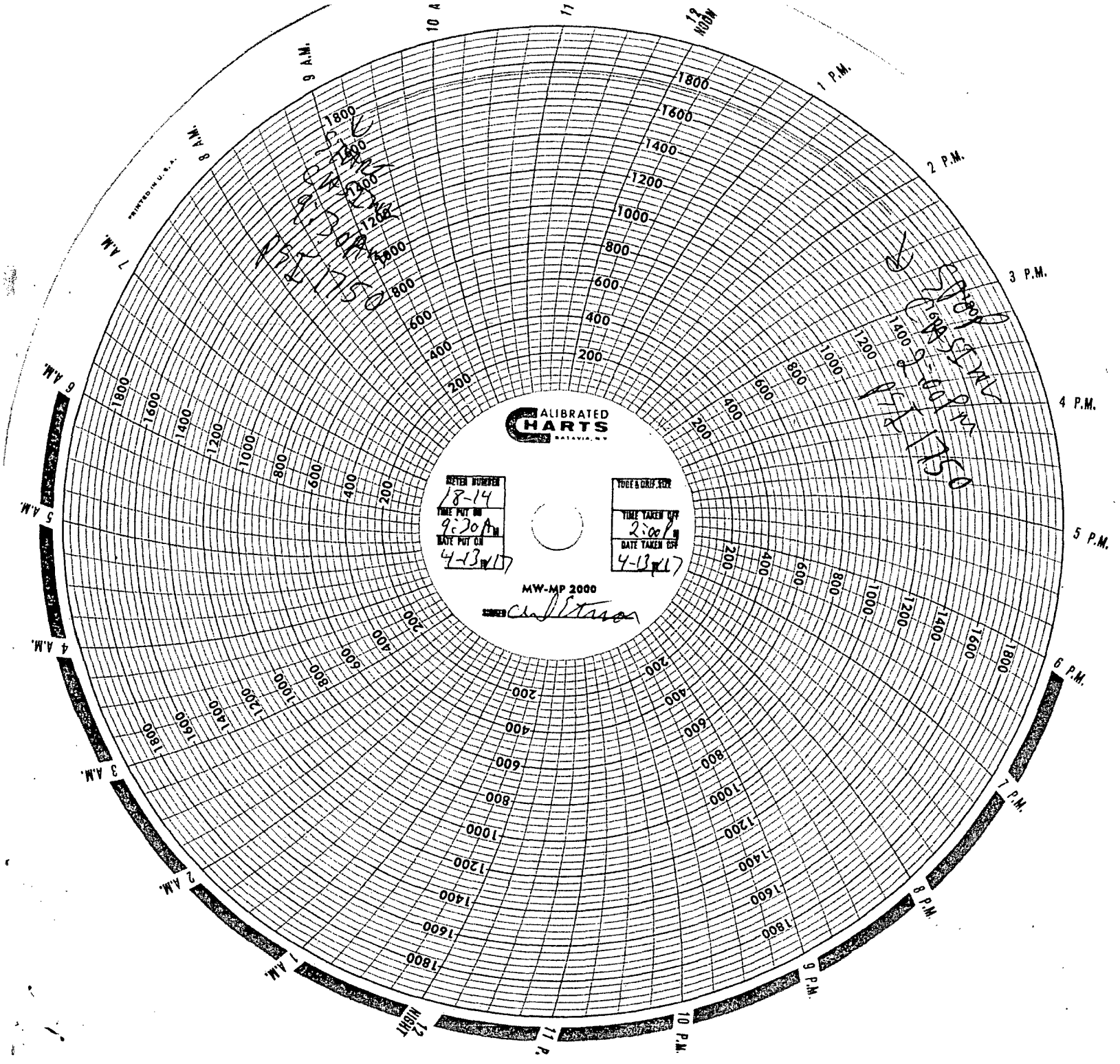
Well Name: 18-14 Type: ER SWD Status: AC TA UC
Field: ANTELOPE CREEK
Location: 18-14 Sec:____ T____ N / S R____ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: __/__/__ Maximum Allowable Pressure: ________ PSIG

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 46 bpd
Pre-test annulus pressure: ______ psig

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	1318 psig	psig	psig
End of test pressure	1318 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1750 psig	psig	psig
5 minutes	1750 psig	psig	psig
10 minutes	1750 psig	psig	psig
15 minutes	1750 psig	psig	psig
20 minutes	1750 psig	psig	psig
25 minutes	1750 psig	psig	psig
30 minutes	1750 psig	psig	psig
4½ Hours minutes	1750 psig	psig	psig
____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test? If Yes, ______ psig.


CALIBRATED
CHARTS
METER NUMBER
18-14
TIME PUT ON
9:30 AM
DATE PUT ON
4-13-17
TUBE & ORIF. SIZE
TIME TAKEN OFF
2:00 PM
DATE TAKEN OFF
4-13-17
MW-MP 2000
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11
12 MIDNT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A
11
PRINTED IN U.S.A.

OMB No. 2040-0042 Approval Expires 11/30/2014

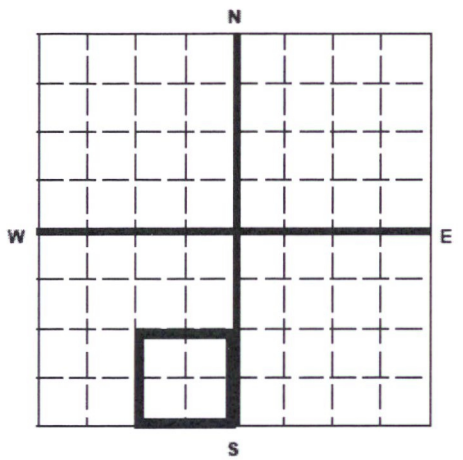
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 07536

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/2/16
Initial [illegible]

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1257	1277	2058		0	0
February	15	1300	1337	1801		0	0
March	15	1294	1322	1965		0	0
April	15	1296	1340	1943		0	0
May	15	1262	1369	1917		0	0
June	15	1269	1358	2117		0	0
July	15	1310	1337	2040		0	0
August	15	1273	1433	1997		0	0
September	15	1240	1366	1640		0	0
October	15	1275	1356	1643		0	0
November	15	1340	1370	1753		0	0
December	15	1330	1366	1612		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor	[signature]	02/08/2016

EPA Form 7520-11 (Rev. 12-11)

CBI BLUE
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-14 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327533**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/14/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0004
pH:	6.80
Calculated TDS (mg/L):	4405.10
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	40.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1110.47	Chloride (Cl):	1500.00
Potassium (K):	24.14	Sulfate (SO_4):	560.00
Magnesium (Mg):	81.14	Bicarbonate (HCO_3):	830.00
Calcium (Ca):	190.66	Carbonate (CO_3):	
Strontium (Sr):	5.89	Acetic Acid (CH_3COO)	
Barium (Ba):	1.02	Propionic Acid (C_2H_5COO)	
Iron (Fe):	49.89	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	16.48	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.52	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.41	Silica (SiO_2):	34.48
Aluminum (Al):	0.25	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	5.20	Phosphates (PO_4):	89.31
Boron (B):	28.91	Oxygen (O_2):	
Silicon (Si):	16.12		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.79	77.72	0.99	0.55	0.00	0.00	2.37	36.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.62	62.85	1.01	0.55	0.00	0.00	2.18	35.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.51	52.85	1.04	0.55	0.00	0.00	2.04	35.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.41	42.93	1.08	0.56	0.00	0.00	1.91	35.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.31	33.21	1.13	0.56	0.00	0.00	1.77	35.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.22	23.83	1.19	0.57	0.00	0.00	1.64	34.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.14	14.91	1.27	0.57	0.00	0.00	1.51	34.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.06	6.58	1.36	0.58	0.00	0.00	1.38	33.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	1.46	0.59	0.00	0.00	1.25	33.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	1.59	0.59	0.00	0.00	1.13	32.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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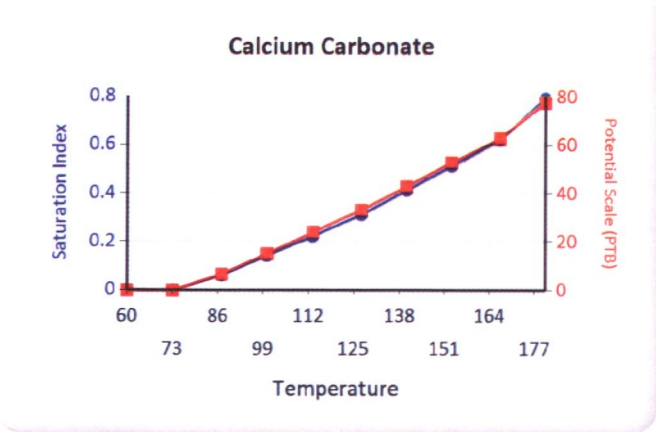
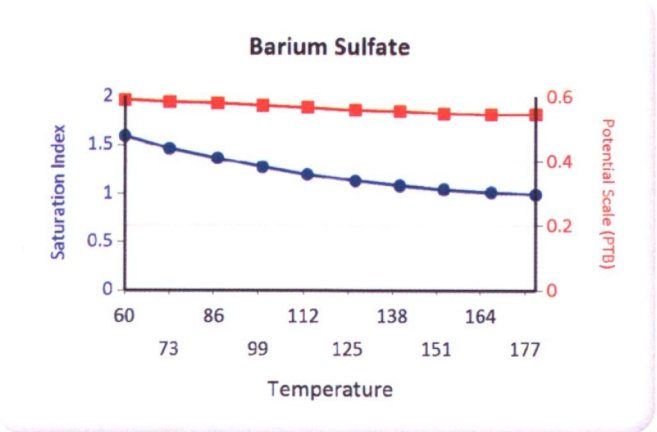
Water Analysis Report

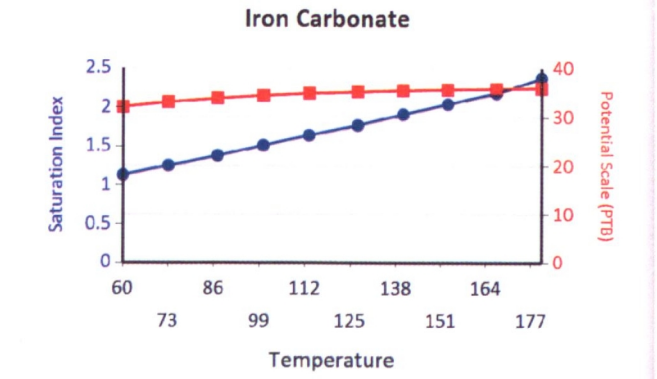
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	10.92	0.00	0.00	0.17	3.56	0.00	0.00	6.77	37.96
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	10.80	0.00	0.00	0.00	0.00	0.00	0.00	5.76	37.01
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	10.64	0.00	0.00	0.00	0.00	0.00	0.00	5.08	35.91
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	10.38	0.00	0.00	0.00	0.00	0.00	0.00	4.42	34.28
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	9.95	0.00	0.00	0.00	0.00	0.00	0.00	3.78	31.99
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	9.22	0.00	0.00	0.00	0.00	0.00	0.00	3.15	28.93
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	7.98	0.00	0.00	0.00	0.00	0.00	0.00	2.53	25.07
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	5.85	0.00	0.00	0.00	0.00	0.00	0.00	1.94	20.46
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	2.23	0.00	0.00	0.00	0.00	0.00	0.00	1.36	15.18
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	9.40

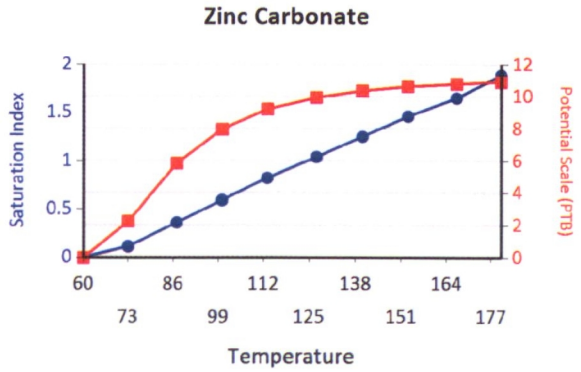
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

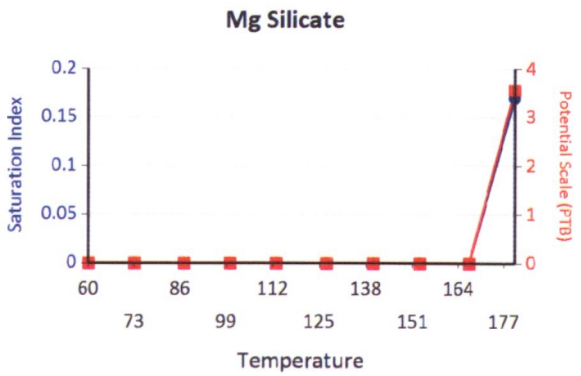
These scales have positive scaling potential under final temperature and pressure: Barium Sulfate Iron Carbonate Fe Silicate

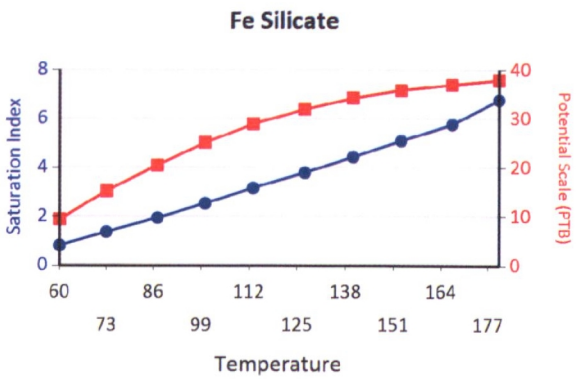







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
2
1.5
1
0.5
0
12
10
8
6
4
2
0
60
73
86
99
112
125
138
151
164
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0.2
0.15
0.1
0.05
0
4
3
2
1
0
60
73
86
99
112
125
138
151
164
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
8
6
4
2
0
40
30
20
10
0
60
73
86
99
112
125
138
151
164
177

OMB No. 2040-0042 Approval Expires 12/31/2011

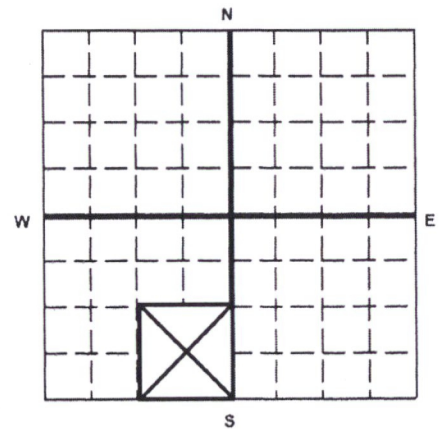
United States Environmental Protection Agency
Washington, DC 20460

EPA

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07536

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section and 1980 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1287	1360	93		0	0
February	14	1301	1355	84		0	0
March	14	1232	1310	493		0	0
April	14	1265	1346	1392		0	0
May	14	1346	1330	1837		0	0
June	14	1338	1324	1985		0	0
July	14	1262	1302	2150		0	0
August	14	1210	1331	2178		0	0
September	14	1236	1321	2106		0	0
October	14	1311	1330	2585		0	0
November	14	1313	1326	2551		0	0
December	14	1270	1343	2515		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/30/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-14 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297446**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0053
pH:	8.10
Calculated TDS (mg/L):	12021.20
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3807.71	Chloride (Cl):	6000.00
Potassium (K):	63.63	Sulfate (SO_4):	78.00
Magnesium (Mg):	19.55	Bicarbonate (HCO_3):	1952.00
Calcium (Ca):	40.91	Carbonate (CO_3):	
Strontium (Sr):	6.09	Acetic Acid (CH_3COO)	
Barium (Ba):	16.60	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.24	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.98	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.07	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.12	Silica (SiO_2):	33.30

Notes:
B=6.57 Al=.02 Li=2.21

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.18	30.22	1.71	9.66	3.28	1.23	1.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	10.99	0.51
88.00	157.00	1.16	29.70	1.63	9.62	3.17	1.23	1.82	1.60	0.00	0.00	0.00	0.00	0.00	0.00	10.78	0.51
97.00	300.00	1.18	30.02	1.55	9.56	3.12	1.23	1.87	1.61	0.00	0.00	0.00	0.00	0.00	0.00	10.62	0.51
106.00	443.00	1.20	30.35	1.48	9.51	3.07	1.23	1.91	1.61	0.00	0.00	0.00	0.00	0.00	0.00	10.47	0.51
115.00	585.00	1.22	30.68	1.41	9.45	3.03	1.23	1.96	1.61	0.00	0.00	0.00	0.00	0.00	0.00	10.33	0.51
124.00	728.00	1.25	31.02	1.36	9.38	3.00	1.23	2.01	1.61	0.00	0.00	0.00	0.00	0.00	0.00	10.20	0.51
133.00	871.00	1.27	31.36	1.30	9.32	2.97	1.23	2.05	1.61	0.00	0.00	0.00	0.00	0.00	0.00	10.08	0.51
142.00	1014.00	1.30	31.70	1.25	9.25	2.95	1.23	2.10	1.62	0.00	0.00	0.00	0.00	0.00	0.00	9.96	0.51
151.00	1157.00	1.33	32.03	1.21	9.18	2.94	1.23	2.14	1.62	0.00	0.00	0.00	0.00	0.00	0.00	9.85	0.51
160.00	1300.00	1.36	32.34	1.17	9.12	2.93	1.23	2.19	1.62	0.00	0.00	0.00	0.00	0.00	0.00	9.75	0.51

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.52	12.11	0.03	0.00	0.00	0.00	0.00	5.76	1.72
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.54	11.79	0.03	0.00	0.00	0.00	0.00	5.77	1.72
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.57	11.53	0.03	0.35	2.37	0.00	0.00	6.00	1.72
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.59	11.28	0.03	0.75	4.84	0.04	0.55	6.24	1.72
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.61	11.04	0.03	1.16	7.37	0.27	2.14	6.49	1.73
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.62	10.82	0.03	1.57	9.94	0.49	3.76	6.76	1.73
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.63	10.61	0.03	1.98	12.54	0.72	5.40	7.03	1.73
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	0.63	10.41	0.03	2.40	15.14	0.96	7.05	7.30	1.74
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.64	10.22	0.03	2.81	17.72	1.19	8.69	7.59	1.74
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.64	10.05	0.03	3.23	20.23	1.43	10.31	7.87	1.74

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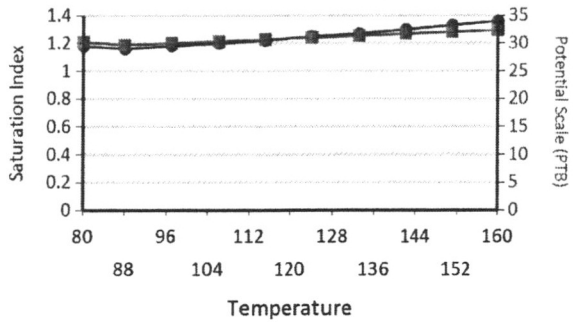
Water Analysis Report

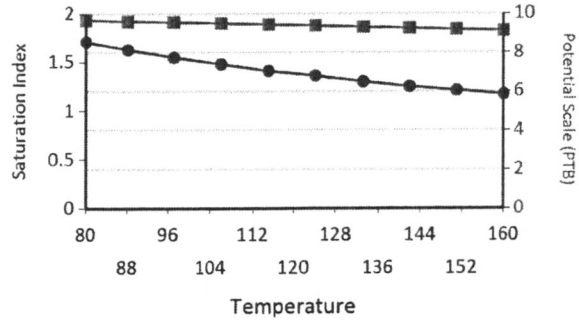
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

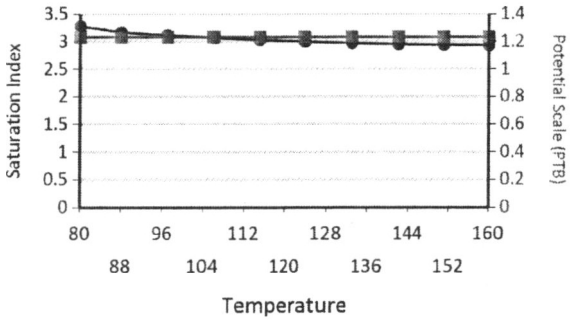
Calcium Carbonate



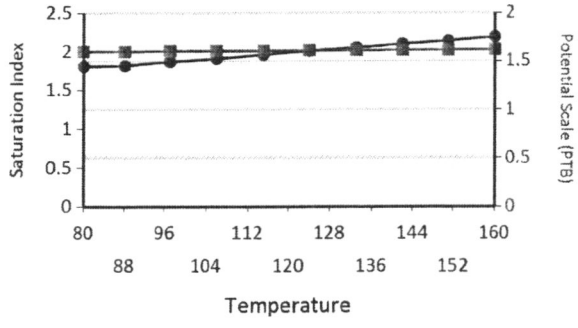
Barium Sulfate



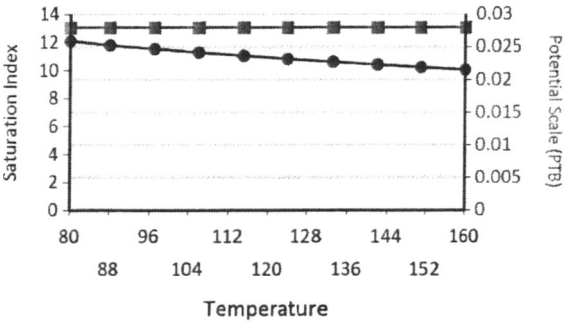
Iron Sulfide



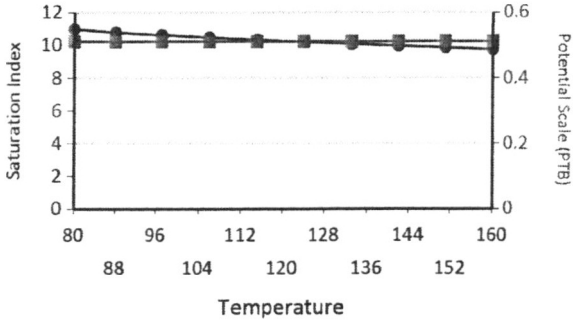
Iron Carbonate



Lead Sulfide



Zinc Sulfide



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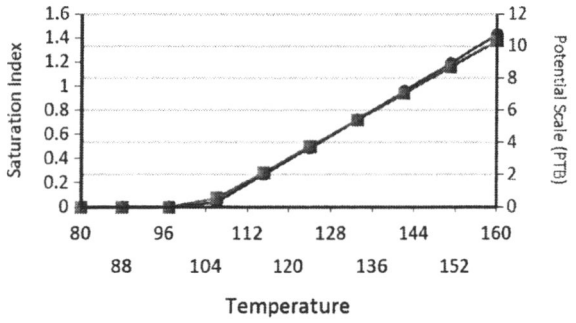
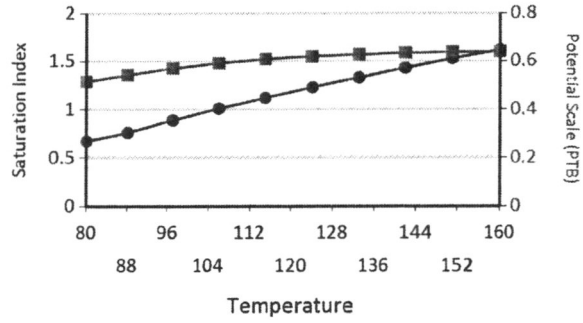
Water Analysis Report

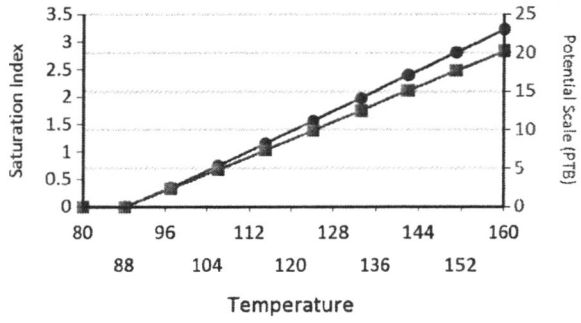
Ca Mg Silicate



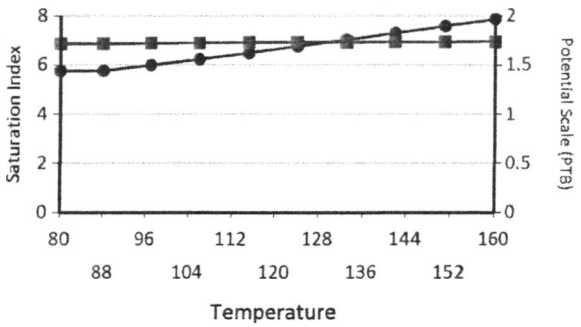
Zinc Carbonate



Mg Silicate



Fe Silicate



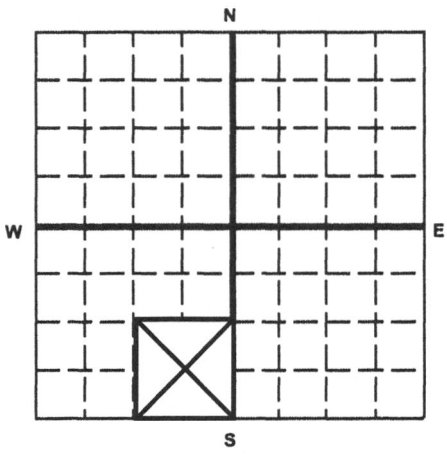
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07536

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [SE] 1/4 of [SW] 1/4 of Section [18] Township [5S] Range [3W]

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [660] ft. frm (N/S) [S] Line of quarter section and [1980] ft. from (E/W) [W] Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells [111]

Lease Name [Ute Indian Tribe] Well Number [UTE TRIBAL 18-14]

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1315	1324	372		0	0
February	13	1340	1393	356		0	0
March	13	1018	1360	191		0	0
April	13	1169	1367	232		0	0
May	13	1300	1372	277		0	0
June	13	884	1392	204		0	0
July	13	1116	1353	141		0	0
August	13	1316	1360	220		0	0
September	13	1321	1369	245		0	0
October	13	1345	1368	281		0	0
November	13	1240	1385	167		0	0
December	13	1244	1370	85		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

CBI 2

UZ Entered
Date 2/20/14
Initial DS

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 18-14 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262957**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.005
pH:	8.20
Calculated TDS (mg/L):	10737.33
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3747.21	Chloride (Cl):	5000.00
Potassium (K):	79.00	Sulfate (SO_4):	150.00
Magnesium (Mg):	30.00	Bicarbonate (HCO_3):	1634.80
Calcium (Ca):	65.00	Carbonate (CO_3):	
Strontium (Sr):	4.90	Acetic Acid (CH_3COO)	
Barium (Ba):	3.30	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.20	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.28	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.01	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.23	Silica (SiO_2):	21.40

Notes:
B=4.5 Al=.01 Li=1.1

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.33	44.13	1.52	1.91	0.00	0.00	1.38	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.34	43.69	1.38	1.88	0.00	0.00	1.44	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.36	44.66	1.25	1.85	0.00	0.00	1.52	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.39	45.71	1.14	1.82	0.00	0.00	1.59	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.43	46.79	1.04	1.78	0.00	0.00	1.67	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.47	47.88	0.95	1.74	0.00	0.00	1.74	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.51	48.95	0.88	1.70	0.00	0.00	1.81	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.56	49.98	0.82	1.66	0.00	0.00	1.88	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.61	50.96	0.77	1.63	0.00	0.00	1.95	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.67	51.85	0.72	1.59	0.00	0.00	2.01	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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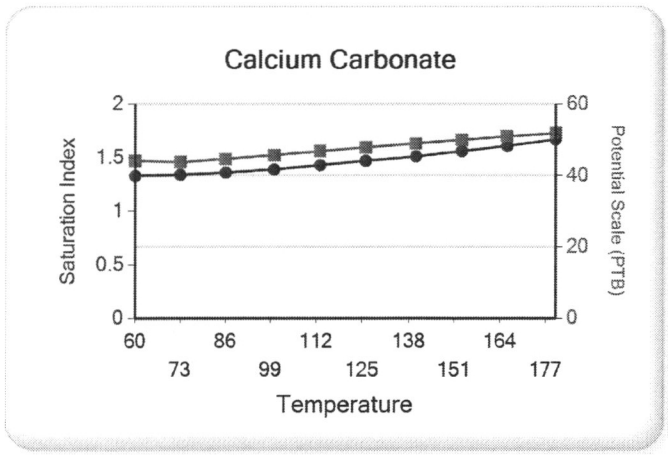
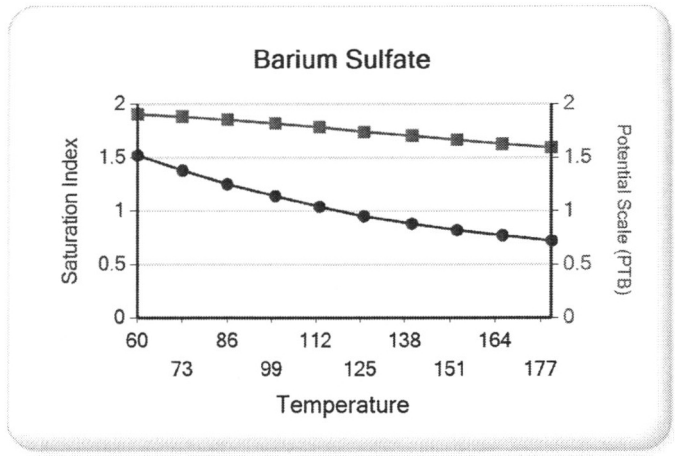
Water Analysis Report

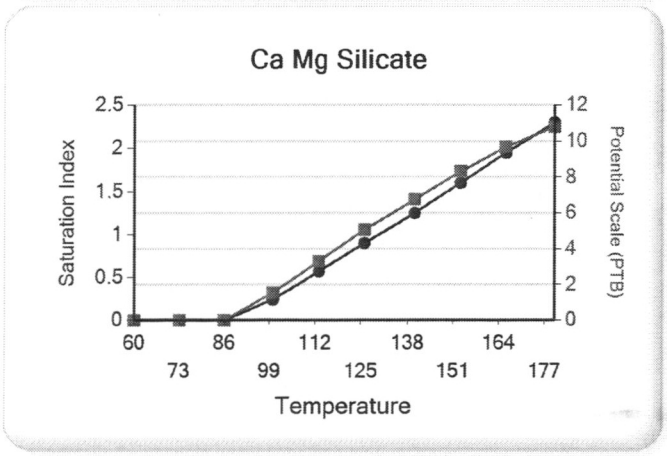
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.49	0.90
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.26	0.00	0.00	4.65	0.90
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.07	0.00	0.00	0.59	3.32	0.00	0.00	4.97	0.91
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.11	0.00	0.00	1.18	6.43	0.24	1.53	5.32	0.91
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.14	0.00	0.00	1.78	9.61	0.57	3.31	5.69	0.92
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.15	0.00	0.00	2.39	12.82	0.90	5.06	6.08	0.93
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.16	0.00	0.00	3.00	15.98	1.25	6.75	6.49	0.93
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.17	0.00	0.00	3.62	18.94	1.60	8.31	6.91	0.93
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.18	0.00	0.00	4.23	21.48	1.95	9.68	7.33	0.93
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.18	0.00	0.00	4.84	23.40	2.30	10.80	7.76	0.93

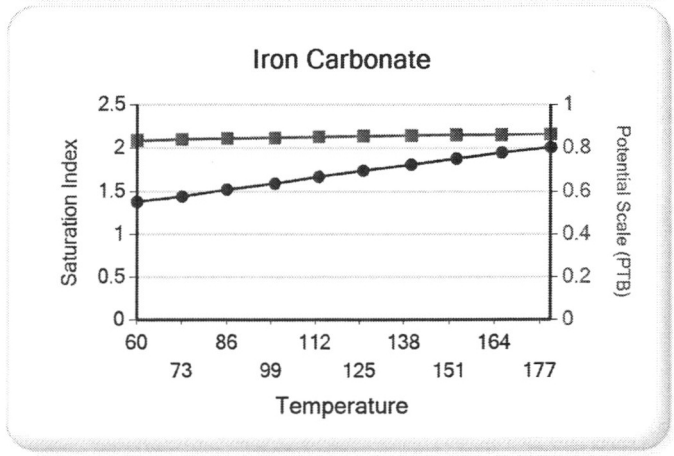
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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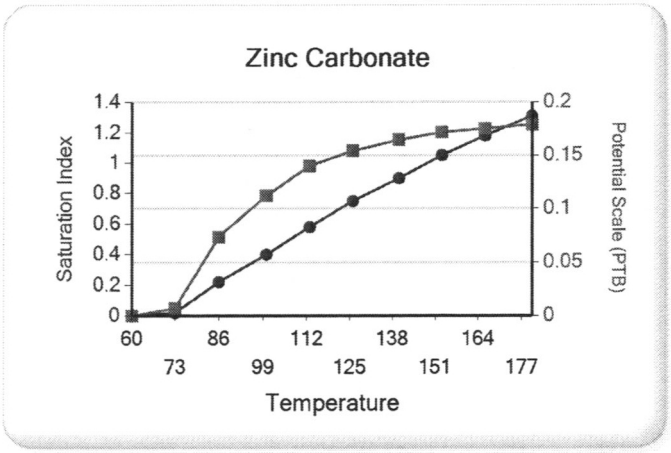
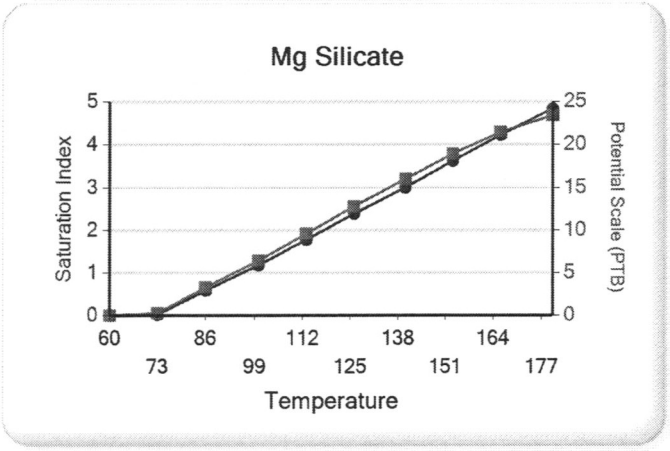
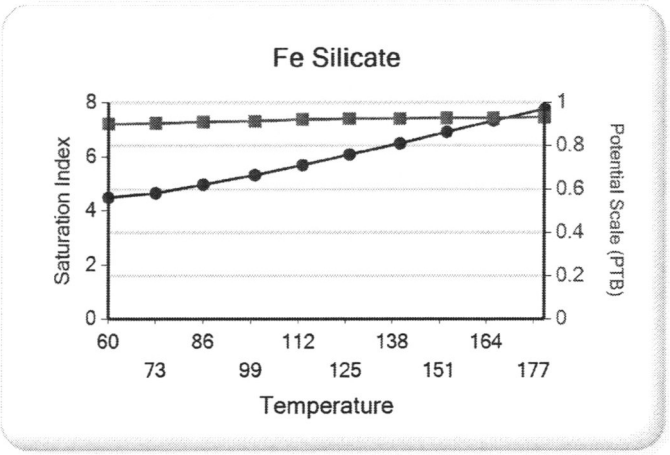
Water Analysis Report







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

UNDERGROUND INJECTION CONTROL PROGRAM

Final Area Permit

Class II Enhanced Recovery Unit

EPA Area Permit No. UT2736-00000

Field Name: Antelope Creek

Unit Name: Antelope Creek Waterflood

County & State: Duchesne County, Utah

issued to:

Petroglyph Operating Company, Inc.

6209 North Highway 61

Hutchinson, Kansas 67502

TABLE OF CONTENTS

PART I. AUTHORIZATION TO CONVERT/OR CONSTRUCT AND INJECT

Pursuant to the Underground Injection Control Regulations of the U. S. Environmental Protection Agency (EPA) codified at Title 40 of the Code of Federal Regulations, Parts 124, 144, 146, and 147,

Petroglyph Operating Company, Inc.
6209 North Highway 61
Hutchinson, Kansas 67502

is hereby authorized, under this area permit, to convert four (4) existing oil production wells to Class II enhanced recovery injection wells located within the Antelope Creek Field, Duchesne County, Utah. Each of these proposed wells are located within the permitted area which is defined as follows:

Township 5 South, Range 3 West, Duchesne County, Utah

Sections 2, 3, 4, 5, 6 (SE/4 of SE/4), 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33.

The Area of Review (AOR) is defined as that area subtended by a line drawn one-quarter (1/4) mile beyond and around the boundaries described above. All of The Sections in T5S-R3W listed above are within the boundaries of the Uintah-Ouray Indian Reservation.

Injection will be for the purpose of enhanced recovery of oil so that Petroglyph Operating Company, Inc. may economically produce oil from the Antelope Creek Field, in accordance with conditions set forth herein, and initially utilizing the following currently existing production wells located in T5S-R3W:

WELL NAME	LOCATION	EPA PERMIT NO.
Ute Tribal #1-8	NW/4 of NW/4 Section 8	UT2736-04201
Ute Tribal #5-8	SE/4 of NW/4 Section 8	UT2736-04203
Ute Tribal #4-18	NW/4 of NE/4 Section 18	UT2736-04202
Ute Tribal #5-18	NE/4 of SE/4 Section 18	UT2736-04204

Injection activities shall not commence until the operator has fulfilled all applicable conditions of this permit and has received written authorization from the Director. "Prior to Commencing Injection" requirements are set forth in Part II, Section C. 1. & 2. of this permit.

All conditions set forth herein refer to Title 40 Parts 124, 144, 146, and 147 of the Code of Federal Regulations (CFR) and are regulations that are in effect on the date that this permit becomes effective.

This permit consists of a total of 46 pages and includes all items listed in the Table of Contents. Further, it is based upon representations made by the permittee and on other information contained in the administrative record. **It is the responsibility of the permittee to read and understand all provisions of this permit.**

This area permit and the authorization to inject are issued for the operating lives of the wells, unless terminated (Part III, Section B); **authorization to inject shall automatically expire due to prolonged postponement of conversion [Part II, Section A. 1. (b)].** The area permit will be reviewed by EPA at least every five (5) years to determine whether action under 40 CFR §144.36(a) is warranted.

The Northern Ute Indian Tribe of the Uintah-Ouray Reservation may apply for primary enforcement responsibility of the UIC program, thereby assuming primary responsibility for regulating this permittee. Notwithstanding approval of the Tribal UIC primacy application, EPA retains responsibility for directly administering and enforcing this federal permit, unless otherwise specifically addressed in the EPA/Tribe MOA (40 CFR §145.25). If EPA determines that the Tribe has issued an equivalent permit under an EPA approved UIC program, EPA and the permittee may agree to terminate this federal permit.

Issued this 12th day of July, 1994.

This permit shall become effective July 12, 1994.

* Max H. Dodson
Director
Water Management Division

NOTE: The person holding this title is referred to as the "Director" throughout this permit.

PART II. SPECIFIC PERMIT CONDITIONS

A. WELL CONVERSION/CONSTRUCTION REQUIREMENTS

1. Casing and Cementing.

   (a) The proposed conversion details submitted with the application are hereby incorporated into this permit as Appendix A, which graphically displays the present casing and cementing details. These plans have been reviewed by the EPA and are consistent with underground injection control (UIC) requirements and shall be binding on the permittee.

   (b) Postponement of conversion. If at least one of the wells under consideration is not converted to injection status within one (1) year from the effective date of this permit, the permit shall automatically expire. The permittee may request an extension for the conversion of the first well. This request shall be in writing to the Director, and shall state the reasons for the delay in conversion, and confirm the protection of all underground sources of drinking water (USDWs). The extension under this section may not exceed one (1) year.

   Financial responsibility shall be maintained during the period of inactivity in accordance with Part II, Section F. Once a permit expires under this part, the full permitting process, including opportunity for public comment, must be repeated before authorization to inject will be reissued.

2. Requirements for Additional Wells. The permittee may convert and/or construct and operate additional wells within the permitted area, provided that all additional wells meet all conditions as set forth in the permit. All sections of this permit apply to any additional well(s) approved for injection.

   (a) Casing and Cementing.

      (i) For any newly drilled injection well(s) constructed under this provision, the long string and surface casing shall be secured to the wellbore, with cement, through any subsurface intervals associated with USDWs.

(ii) For any converted well(s), the long string and surface casing shall be secured to the wellbore in a manner similar to construction standards required of the proposed injection well(s) listed in this permit.

(b) Conversion/Construction Notification Requirement. The permittee shall give the Director thirty (30) days notice before proceeding with any activity with an additional well(s). Also the permittee shall submit a plan consisting of a well schematic and construction details, or modifications, for any such proposed enhanced recovery injection well(s). The plan must first be approved by the Director, and the permittee shall not begin implementation of the plan until after receiving written authorization from the Director.

(c) Formation Logging and Testing. All required testing and logging has been performed in accordance with Part II, Section 6. (a) & (b). For wells being converted (from production to injection), only those logs or tests which can physically be performed are required.

(d) Area of Review (AOR) Requirements. In conjunction with (b) above, the permittee shall submit information on any well, within a 1/4-mile of the Area Permit boundary, which was not included in the original application. This information shall include the well location, casing and cementing details, top of cement (calculated or logged), depths to tops and bottom of any USDWs, formation depths, and P&A plan(s).

(e) Corrective Action. For any wells, that penetrate the injection zone within the AOR, which are improperly sealed, completed, or abandoned, the Director may require such corrective action as is necessary to prevent movement of fluid out of the injection zone and into USDWs. Requirements may include such actions as remedial well construction or injection pressure limitations.

3. Tubing and Packer Specifications. The injection wells will be equipped with 2-7/8 inch tubing, with a packer set above the injection zone. The permittee is required to set the packer at a distance of no more than 100 feet above the uppermost perforations.

4. Monitoring Devices. The operator shall provide and maintain in good operating condition:

(a) a tap on the suction line for the purpose of obtaining representative samples of the injection fluids;

(b) two (2), one-half (1/2) inch Female Iron Pipe (FIP) fittings, isolated by plug or globe valves, and located: 1) at the wellhead on the tubing; and 2) on the tubing/casing annulus, and positioned to allow attachment of 1/2 inch Male Iron Pipe (MIP) gauges or the attachments for equivalent "quick-disconnect" gauges.

The operator shall always have in his possession calibrated gauges for the use of their field personnel to monitor tubing injection pressure and tubing/casing annulus pressure. The calibrated gauges shall be certified for at least ninety-five (95) percent accuracy throughout the range of anticipated injection pressures; and

(c) a non-resettable flow meter with cumulative volume recorder that is certified for at least ninety-five (95) percent accuracy, throughout the range of injection rates allowed by the permit.

5. Proposed Changes and Workovers. The permittee shall give advance notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted well. Major alterations or workovers of the permitted well shall meet all conditions as set forth in this permit. A major alteration or workover shall be considered any work performed, which affects casing, packer(s), or tubing. For the conversion or construction of any additional well(s), the permittee shall give the Director thirty (30) days notice of the proposed activity as per Part II, Section A. 2.(b). A demonstration of mechanical integrity shall be performed within thirty (30) days of completion of any workover and/or alterations, and prior to resuming injection activities in accordance with Part II, Section C. 3. (a).

The permittee shall provide all records of well workovers, logging, or other test data to EPA within sixty (60) days of completion of the activity. Appendix B contains samples of the appropriate reporting forms.

6. Formation Testing and Logging.

(a) Testing. Upon conversion and/or construction of each well, the permittee is required to determine the injection zone fluid pore pressure (static bottom hole pressure) prior to commencement of disposal operations.

(b) Step-Rate Test. A step-rate injectivity test shall be performed on **at least one (1)** of the proposed injection wells to determine the formation parting pressure and the results submitted to the EPA. This testing may be performed prior to full operation, or within three (3) months after injection operations are initiated.

(c) Logging. The permittee shall conduct appropriate down-hole logging prior to the setting of production casing on all **newly constructed** wells. The following suite of logs are required; Dual Induction (DIL) and Compensated Density/Neutron (CNL-FDC). A Cement Bond/Gamma Ray log shall be run after casing is set. All logging results shall be accompanied by a brief written narrative (prepared by a knowledgeable log analyst) identifying the USDWs, formation tops, confining layers, injection zones and top of cement.

B. CORRECTIVE ACTION

The operator is not required to take any corrective action on any of the forty-nine (49) production wells or the five (5) plugged and abandoned wells within the area of review (AOR), before the effective date of the permit. The manner in which the wells are cased and cemented will prevent any migration of fluids from the injection zones into underground sources of drinking water (USDWs) in the Uinta Formation.

C. WELL OPERATION

1. Prior to Commencing Injection (Initial Wells). Individual enhanced recovery injection operations for the four (4) existing production wells (Ute Tribal #1-8, #5-8. #4-18 and #5-18) may not commence until the permittee has complied with both (a) and (b), as follows:

(a) All construction for each respective well is complete and the logging and/or testing requirements have been fulfilled, and the permittee has submitted a **Well Rework Record (EPA Form 7520-12)**. Appendix B contains samples of the appropriate reporting forms.

(i) The Director has inspected or otherwise reviewed the newly converted injection well(s) and he has notified the operator that the well(s) is in compliance with the conditions of the permit; or

(ii) The Permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within thirteen (13) days of the date the Director has received the Well Rework Record, paragraph (a) above, in which case prior inspection or review is waived and the permittee may commence injection. However, in all circumstances, item (b) below must be satisfied.

(b) The permittee demonstrates that a given well(s) has mechanical integrity in accordance with 40 CFR § 146.8 and Part II, Section C. 3. (a), below, and has received notice from the Director that such a demonstration is satisfactory. The permittee shall notify EPA two (2) weeks prior to conducting this test so that an authorized representative of the EPA may be present to observe the test. Results of the test shall be submitted to the Director as soon as possible, but no later than thirty (30) days after the demonstration.

2. Prior to Commencing Injection (Additional wells). Injection operations for additional wells may not commence until the permittee has complied with both (a) and (b) below:

(a) All required formation testing and logging has been performed in accordance with Part II, Section A. 2. (c), conversion and/or construction is complete, and the permittee has submitted the pertinent Well Completion Reports (EPA Form No. 7520-10) or Well Rework Record (EPA Form No. 7520-12) in Appendix B; and

(i) the Director has inspected or otherwise reviewed any new injection wells and finds them in compliance with the conditions of the permit; or

(ii) the permittee has not received notice from the Director of his, or her, intent to inspect, or otherwise review, any of the new injection wells within thirteen (13) days of the date or receipt of the notice in paragraph (i) of this permit, in which case prior inspection or review is waived and the permittee may commence injection. (Note: In all circumstances item (b), below, must also be satisfied.)

(b) The permittee demonstrates that a given well(s) has mechanical integrity in accordance with 40 CFR § 146.8 and Part II, Section C. 3. (a), and the permittee has received notice from the Director that such a demonstration is satisfactory. The permittee shall notify EPA two (2) weeks prior to conducting this test so that an authorized representative may be present to observe the test. Results of the test shall be submitted to the Director as soon as possible but no later than thirty (30) days after the demonstration.

3. Mechanical Integrity.

(a) Method of Demonstrating Mechanical Integrity. A demonstration of the absence of significant leaks in the casing, tubing, and/or packer must be made by performing a tubing/casing annulus pressure test. This test shall be for a minimum of forty-five (45) minutes at: (1) a pressure of 300 pounds per square inch gauge (psig) measured at the surface, if the well is shut-in; or (2) a pressure differential of 200 psig between the tubing and the tubing/casing annulus, if injection activities are continued during the test. The tubing/casing annulus shall be filled with a non-corrosive fluid (either a non-toxic liquid or the injection liquid) at least twenty-four (24) hours in advance of the test. Pressure values shall be recorded at five-minute intervals. A well passes the mechanical integrity test if there is less than a ten (10) percent **decrease or increase** in pressure over the forty-five (45) minute period.

(b) Schedule for Demonstration of Mechanical Integrity. A demonstration of mechanical integrity shall be made at regular intervals, no less frequently than once every five (5) years, in accordance with 40 CFR § 146.8, and paragraph (a), above, unless otherwise modified. Initiation of mechanical integrity demonstrations will be according to the following provisions:

(i) It shall be the permittee's responsibility to arrange and conduct the routine five-year tubing/casing annulus pressure test demonstration. The permittee shall notify the Director of his intent to demonstrate mechanical integrity at least two (2) weeks days prior to such demonstration. Results of the test shall be submitted to the Director as soon as possible, but no later than sixty (60) days after the demonstration.

(ii) In addition to any demonstration made under paragraph (i) above, the Director may require a demonstration of mechanical integrity at any time during the permitted life of a well.

(c) Loss of Mechanical Integrity. If the well(s) fail to demonstrate mechanical integrity during a test, or a loss of mechanical integrity as defined by 40 CFR § 146.8 becomes evident during operation, the permittee shall notify the Director in accordance with Part III, Section E. 10. of this permit. Furthermore, **injection activities shall be terminated immediately**; and operation shall not be resumed until the permittee has taken necessary actions to restore integrity to the well and EPA gives approval to recommence injection.

4. Injection Interval. Fluid injection shall be limited to the gross interval within the Green River Formation between the approximate depths of 3,750 and 5,850 feet. The Green River Formation, from its average top at ±1,410 feet to ±3,974 feet (**upper confining zone**), is composed of impermeable calcareous shales and continuous beds of microcrystalline dolomite. Petroglyph proposes to inject water into multiple lenticular sands which are distributed throughout a 2,100-foot section of the Green River Formation. These sands are individually separated by shale which act as isolation barriers (**confining zones**) for the waterflood.

5. Injection Pressure Limitation.

(a) Injection pressure, measured at the surface, shall not exceed an amount that the Director determines is appropriate to ensure that injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to USDWs.

(b) The exact pressure limit may be increased or decreased by the Director to ensure that the requirements in paragraph (a) are fulfilled. In order to determine an exact pressure limit, the permittee shall conduct a step-rate injection test or other authorized well test(s) that will serve to determine the fracture pressure of the injection zone. Test procedures shall be pre-approved by the Director. The Director will specify in writing, to the permittee, any increase or decrease to the injection pressure based upon the test results and/or other parameters reflecting actual injection operations. **Until such time that this demonstration is made, the initial injection pressure, measured at the surface, shall not exceed 1,900 psig.**

6. Injection Volume Limitation. **There is no limitation on the number of barrels of water per day (BWPD)** that shall be injected into the Green River sand perforations, provided further that in no case shall injection pressure exceed that limit shown in Part II, Section C. 5. (b) of this permit.

7. Injection Fluid Limitation. Injection fluids are limited to those which are identified in 40 CFR § 144.6. (b) (2) as fluids used for enhanced recovery of oil or natural gas. The permittee shall provide a listing of the sources of the injected fluids in accordance with the reporting requirements in Part II, Section D. 4. of this permit.

8. Annular Fluid. The annulus between the tubing and the casing shall be filled with fresh water and/or brines treated with a corrosion inhibitor, a scale inhibitor, and an oxygen scavenger, or other fluid as approved, in writing, by the Director.

9. Operation of Additional Wells. The permittee may operate additional wells within the permit area, provided that the additional wells meet all conditions as set forth in the permit.

D. MONITORING, RECORDKEEPING, AND REPORTING OF RESULTS

1. Injection Well Monitoring Program. Samples and measurements shall be representative of the monitored activity. The permittee shall utilize the applicable analytical methods described in Table 1 of 40 CFR § 136.3, or in Appendix III of 40 CFR Part 261, or in certain circumstances, by other methods that have been approved by the EPA Administrator. Monitoring shall consist of:

   (a) Analysis of the disposed fluids, performed:

      (i) annually for Total Dissolved Solids, Ph, Specific Conductivity, and Specific Gravity from the common facility; however, if injection is maintained from more than one well from each common facility, then only one annual analysis is required for that facility.

      (ii) whenever there is a change in the source of disposed fluids. A comprehensive water analysis shall be submitted to the Director within thirty (30) days of any change in injection fluids.

   (b) Observations of flow rate, injection pressure, annulus pressure, and cumulative volume shall be conducted weekly. All observations shall be observed and/or measured at approximately the same time. Observations of each shall be recorded monthly.

2) Monitoring Information. Records of any monitoring activity required under this permit shall include:

   (a) The date, exact place, the time of sampling or field measurements;

   (b) The name of the individual(s) who performed the sampling or measurements;

   (c) The exact sampling method(s) used to take samples;

   (d) The date(s) laboratory analyses were performed;

(e) The name of the individual(s) who performed the analyses;

(f) The analytical techniques or methods used by laboratory personnel; and

(g) The results of such analyses.

3. Recordkeeping.

(a) The permittee shall retain records concerning:

(i) the nature and composition of all injected fluids until three (3) years after the completion of plugging and abandonment which has been carried out in accordance with the Plugging and Abandonment Plan shown in Appendix C, and is consistent with 40 CFR § 146.10.

(ii) all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five (5) years from the date of the sample, measurement or report throughout the operating life of the well.

(b) The permittee shall continue to retain such records after the retention period specified in paragraphs (a) (i) and (a) (ii) unless he delivers the records to the Director or obtains written approval from the Director to discard the records.

(c) The Permittee shall maintain copies (or originals) of all pertinent records at the office of Petroglyph Operating Company, Inc., 6209 North Highway 61, Hutchinson, Kansas 67502.

4. Annual Reporting. The permittee shall submit an Annual Report, **whether injecting or not**, to the Director summarizing the results of the monitoring required by Part II, Section D. 1. (a) and (b) of this permit. The permittee shall also include a listing of all sources of the fluids injected during the year identifying the source by either the well name(s), the field name(s), or the facility name(s).

The first Annual Report shall cover the period from the effective date of the permit through December 31 of that year. Subsequent Annual Reports shall cover the period from January 1 through December 31. **Annual Reports shall be submitted by February 15 of the following year following data collection.** Appendix B contains Form 7520-11 which may be copied and used to submit the Annual Report.

E. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment. The permittee shall notify the Director forty-five (45) days before abandonment of the well.

2. Plugging and Abandonment Plan. The plugging and abandonment plans submitted by the permittee, are incorporated into the permit, (Appendix C of the Permit) and shall be binding on the permittee. These plans have been reviewed and approved by the EPA. The EPA reserves the right to change the manner in which the well will be plugged if the well is modified during its permitted life or if the well is not made consistent with EPA requirements for construction and mechanical integrity. The Director may require the permittee to update the estimated plugging cost periodically. Such estimates shall be based upon costs which a third party would incur to plug the well according to the plan.

3. Cessation of Injection Activities. After a cessation of operations of two (2) years, the permittee shall plug and abandon the well in accordance with the Plugging and Abandonment Plan, unless the permittee:

   (a) has provided notice to the Director; and

   (b) has demonstrated that the well will be used in the future; and

   (c) has described actions or procedures, satisfactory to the Director, that will be taken to ensure that the well will not endanger underground sources of drinking water during the period of temporary abandonment.

4. Plugging and Abandonment Report(s). Within sixty (60) days after plugging the well, the permittee shall submit a report on Form 7520-13 to the Director. The report shall be certified as accurate by the person who performed the plugging operation, and the report shall consist of either: (1) a statement that the well was plugged in accordance with the plan; or (2) where actual plugging differed from the plan, a statement that specifies the different procedures followed.

5. Plugging of Additional Wells. The permittee may plug and abandon any future additional enhanced recovery injection wells within the permit area that were converted or constructed under Part II, Section A., provided that the plugging and abandonment meets all conditions as set forth in this permit.

F. FINANCIAL RESPONSIBILITY

1. Demonstration of Financial Responsibility. The permittee is required to maintain continuous financial responsibility and resources to close, plug, and abandon the injection wells as provided in the plugging and abandonment plan.

   (a) The permittee may submit a written request to EPA to change the type of financial mechanism or instrument utilized. A change in demonstration of financial responsibility must be approved in writing by the Director.

2. Insolvency of Financial Institution. In the event that an alternate demonstration of financial responsibility has been approved under (a), above, the permittee must submit an alternate demonstration of financial responsibility acceptable to the Director within sixty (60) days after either of the following events occur:

   (a) The institution issuing the trust or financial instrument files for bankruptcy; or

   (b) The authority of the trustee institution to act as trustee, or the authority of the institution issuing the financial instrument, is suspended or revoked.

3. Cancellation of Demonstration by Financial Institution. The permittee must submit an alternative demonstration of financial responsibility acceptable to the Director, within sixty (60) days after the institution issuing the trust or financial instrument serves 120-day notice to the EPA of their intent to cancel the trust or financial instrument.

PART III. GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground disposal in accordance with the conditions of this permit. The permittee, as authorized by this permit, shall not construct, operate, maintain, convert, plug, abandon, or conduct any other disposal activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 142 or otherwise adversely affect the health of persons. Any underground disposal activity not authorized in this permit or otherwise authorized by permit or rule is prohibited. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any enforcement action brought under the provisions of Section 1431 of the Safe Drinking Water Act (SDWA), 42 USC §300i, or any other law governing protection of public health or the environment for any imminent and substantial endangerment to human health, or the environment, nor does it serve as a shield to the permittee's independent obligation to comply with all UIC regulations.

B. PERMIT ACTIONS

1. Modification, Reissuance, or Termination. The Director may, for cause or upon a request from the permittee, modify, revoke and reissue, or terminate this permit in accordance with 40 CFR §§ 124.5, 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications for cause as specified in 40 CFR § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

2. Conversions. The Director may, for cause or upon a request from the permittee, allow conversion of the well from a Class II salt water disposal well to a non-Class II well. Requests to convert the disposal well from its Class II status to a non-Class II well,

such as, a production well, must be made in writing to the Director. Conversion may not proceed until a permit modification indicating the conditions of the proposed conversion is received by the permittee. Conditions of the modification may include such items as, but is not limited to, approval of the proposed well rework, follow up demonstration of mechanical integrity, and well specific monitoring and reporting following the conversion.

3. Transfers. This permit is not transferrable to any person except after notice is provided to the Director and the requirements of 40 CFR § 144.38 are complied with. The Director may require modification, or revocation and reissuance, of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the SDWA.

4. Operator Change of Address. Upon the operator's change of address, notice must be given to the appropriate EPA office at least fifteen (15) days prior to the effective date.

C. SEVERABILITY

If any provision of this permit or the application of any provision of this permit to any circumstance is stayed or held invalid, all remaining provisions of this permit shall remain fully effective and enforceable, except for those provisions which are not severable from the stayed or invalid provision.

D. CONFIDENTIALITY

In accordance with 40 CFR Part 2 and 40 CFR §144.5, any information submitted to EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 CFR Part 2 (Public Information). EPA will deny claims of confidentiality including but not limited to the following information:

- The name and address of the permittee; and
- Information which deals with the existence, absence or level of contaminants in drinking water.

E. GENERAL DUTIES AND REQUIREMENTS

1. Duty to Comply. The permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, or modification. Such noncompliance may also be grounds for enforcement action under the Resource Conservation and Recovery Act (RCRA).

2. Penalties for Violations of Permit Conditions. Any person who violates a permit requirement is subject to civil penalties, fines, and other enforcement action under the SDWA and may be subject to such actions pursuant to the RCRA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

6. Duty to Provide Information. The permittee shall furnish the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and

reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

7. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   (d) Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the SDWA any substances or parameters at any location.

8. Records of Permit Application. The permittee shall maintain records of all data required to complete the permit application and any supplemental information submitted for a period of five (5) years from the effective date of this permit. This period may be extended by request of the Director at any time.

9. Signatory Requirements. All reports or other information requested by the Director shall be signed and certified according to 40 CFR § 144.32.

10. Reporting of Noncompliance.

   (a) Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Twenty-four Hour Reporting.

(i) The permittee shall report to the Director any noncompliance which may endanger health or the environment. Information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances by telephoning EPA at (303) 293-1550 (during normal business hours) or at (303) 293-1788 (for reporting at all other times). The following information shall be included in the verbal report:

(A) Any monitoring or other information which indicates that any contaminant may cause endangerment to an underground source of drinking water (USDW).

(B) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

(ii) A written submission shall also be provided to the Director within five (5) days of the time the permittee becomes aware of the potential for endangerment to health or the environment. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(d) Other Noncompliance. The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Part III, Section E. 10. (c) (ii) of this permit.

(e) Other Information. Where the permittee becomes aware that any relevant facts were not submitted in the permit application, or incorrect information was submitted in a permit application or in any report to the Director, the permittee shall submit such correct facts or information within two (2) weeks of the time such information becomes known.